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On linyphiid spiders (Araneae) from Israel

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On linyphiid spiders (Araneae) from Israel. - 28 linyphiid species are recorded from Israel, eleven of which are reported as new to the Israeli fauna, and six are described as new to science: *Araeoncus banias* sp. n., *Canariphantes epigynatus* sp. n., *Improphantes breviscapus* sp. n., *Trichoncus rostralis* sp. n., *Troxochrus triangularis* sp. n. and *Typhochrestus meron* sp. n.

Keywords: Arachnida - Linyphiidae - new species - new records.

INTRODUCTION

At present, nearly 20 valid linyphiid species are known from Israel (O. P.-Cambridge, 1872; Pluess *et al.*, 2008; Tanasevitch, 2011), with only two from them, *Alioranus pastoralis* (O. P.-Cambridge, 1872) and *Pelecopsis pavida* (O. P.-Cambridge, 1872), described from that country.

In September 2011, in the course of a brief collecting trip across Israel, a small material has been taken which, together with additional samples provided by several other people, forms the basis of the present contribution. Altogether, this material appears to contain 28 known species, as well as a few new ones. Six of these latter are put on record below.

MATERIAL AND METHODS

This paper deals with linyphiids collected in September 2011 by A. Tanasevitch, T. Piterkina & S. Zonstein, with spider material kept at the Department of Zoology, University of Tel Aviv, Israel, as well as with some material available from several personal collections.

Most samples were mainly taken by sifting leaf litter, as well as by sweeping and hand collecting, whereas material delivered by other persons was mainly obtained by pitfall trapping, being generally in poor condition.

If not mentioned otherwise, the material is deposited in the Department of Zoology & National Collections of Natural History, Tel Aviv University, Israel; some paratypes and non-types are in the Muséum d'histoire naturelle, Geneva, Switzerland, and in the collection of the Zoological Museum of the Moscow State University, Moscow, Russia.

The chaetotaxy of Erigoninae is given in a formula (e.g., 2.2.1.1) which refers to the number of dorsal spines on tibiae I-IV. For Micronetinae, the chaetotaxy is given in a different formula, e.g., Ti I: 2-1-1-2(1), which means that tibia I has two dorsal

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spines, one pro-, one retrolateral spine, and two or one ventral spine (the apical spines are disregarded). The sequence of leg segment measurements is as follows: femur + patella + tibia + metatarsus + tarsus. All measurements are given in mm. All scale lines in the figures correspond to 0.1 mm.

The terminology of genitalic structures in Micronetinae follows that of Saaristo & Tanasevitch (1996), for Erigoninae it mainly follows that of Hormiga (2000).

The following abbreviations are used in the text and figures: ARP - anterior radical process; BC - bursa copulatrix; Ca - carina; DO - dorsal outgrowth; DP - dorsal plate; DPS - distal part of scape; DSA - distal suprategular apophysis; E - embolus; ED - embolic division; EP - embolus proper; L - lamella characteristica; MHNG - Muséum d'histoire naturelle, Geneva, Switzerland; M - membrane; MM - median membrane; Mt - metatarsus; P - proscape; PMP- posterior median plate; PO - prolateral outgrowth; R - radix; RA - radical apophysis; RO - retrolateral outgrowth; TAU - Department of Zoology & National Collections of Natural History, Tel Aviv University, Israel; Th - thumb; Ti - tibia; TmI - position of trichobothrium on metatarsus I; X - outgrowth on ARP; Z - outgrowth on DSA; ZMMU - Zoological Museum of the Moscow State University, Moscow, Russia.

RESULTS

Agyneta pseudorurestris Wunderlich, 1980

? *Erigone rurestris* not sensu C. L. Koch, 1836. – O. P.-Cambridge, 1872: 289, possible misidentification.

MATERIAL: 1 ♂; 1 ♂ (MHNG); ISRAEL, 10 km SSW of Beit-Shemesh, Adullam Nature Park, 300-400 m a.s.l., pitfall traps; 10.III.2008; leg. O. Skutetsky. – 1 ♂; Banias Nature Reserve (33°14.8'N 35°41.8'E); 25.V.2010; leg. S. Zonstein. – 1 ♂; Pamat-HaNadiv, 1 km S of Zihron-Ya'aqov (32°33'N 34°57'E), 130 m a.s.l.; 18.XII.2010; leg. S. Zonstein.

PREVIOUS RECORDS: In Israel this species was hitherto known from Beer Sheva (Pluess *et al.*, 2008: 369). It seems quite possible that *Erigone rurestris*, recorded by O. P.-Cambridge (1872) from Jerusalem, the Lebanon and Beirut (sic!), is a misidentified *A. pseudorurestris*.

Alioranus pastoralis (O. P.-Cambridge, 1872)

MATERIAL: 4 ♂, 1 ♀ + 2 ♂ + 1 ♂ + 2 ♂; ISRAEL, environs of Eshkolot (31°23'41.6"N 34°54'11.9"E), pitfall traps; 13.-18.I.2007; leg. I. Shtirberg. – 24 ♂, 1 ♀ (MHNG); Upper Galilee, environs of En Ya'aqov (33°0'27.5"N 35°14'20.0"E), pitfall trap 2; 19.-24.I.2007; leg. I. Shtirberg. – 20 ♂; same, pitfall traps; 26.XI.-1.XII.2006; leg. I. Shtirberg. – 1 ♂; same, pitfall trap 11; 14.-19.I.2007; leg. I. Shtirberg. – 2 ♂; Upper Galilee, Mt Meron, Meron Field Station (33°0'3.12"N 35°25'41.52"E); 2.IV.2011; T. Levanony. – 5 ♂ + 1 ♂ + 1 ♂; same; 5.-12.IV.2007; leg. T. Levanony. – 5 ♂; Upper Galilee, Mt Meron, Ziv'on; 2.IV.2011; T. Levanony. – 1 ♀; Adullam Nature Park; 20.III.2008; leg. O. Skutetsky. – 1 ♂ + 1 ♂; ca 10 km SW of Bait She'an, Gilboa, pitfall trap 5; 23.IV.2010; leg. C. Drees & L. Friedman. – 1 ♂; 8 km SE of Beit-Shemesh, environs of Matta (31°42'47.8"N 35°3'56.0"E), pitfall trap 13C; 13.-18.I.2007; leg. I. Shtirberg. – 1 ♂, 1 ♀; ca 10 km SSW of Beit-Shemesh, Adullam Nature Park, pitfall traps; III.2003; U. Columbus & T. Levanony. – 1 ♂; south shore of Lake Kinneret near Deganya; 26.IV.2010; leg. C. Drees & L. Friedman.

PREVIOUS RECORDS: In Israel this species was hitherto known from Mt Tabor (type locality) (O. P.-Cambridge, 1872) and Beer Sheva (Pluess *et al.*, 2008).

Araeoncus banias sp. n. Figs 1-7

HOLOTYPE: ♂; ISRAEL, Upper Galilee, Banias Nature Reserve, 370 m a.s.l., bank of Guveta stream (33.24839ºN 35.69193ºE), among stones and leaf litter (*Quercus calliprinos* and *Laurus nobilis*); 15.IX.2011; leg. A. Tanasevitch, T. Piterkina & S. Zonstein.

PARATYPES: 1 ♀; 1 ♀ (MHNG); from same locality, collected together with the holotype.

ETYMOLOGY: The specific epithet, a noun in apposition, is taken from the name of type locality.

DIAGNOSIS: The new species is characterized by the presence of a thick and long outgrowth on the anterior radical process in the embolic division on the male palp. The female is diagnosed by the presence of a cotter-shaped flat elevation in the median furrow area of the epigyne, as well as by the triangular shape of its dorsal plate.

DESCRIPTION: Male (holotype). Total length 1.88. Carapace dark brown, modified as shown in Figs 1-2, 0.93 long, 0.58 wide. Chelicerae 0.30 long, unmodified. Legs brown. Leg I 2.27 long (0.63+0.20+0.53+0.53+0.38), IV 2.44 long (0.73+0.20+0.63+0.55+0.33). Chaetotaxy: 2.2.1.1, spines on tibiae I-II very small and poor visible, on III-IV about 1-1.5 diameter of segment. TmI 0.40. Metatarsus IV without trichobothrium. Palp as in Figs 3-4: palpal tibia narrow, elongated, with a deep hollow apically. Paracymbium small, simple, hook-shaped. Distal suprategular apophysis narrow, long, V-shaped and curved, regularly tapering towards a pointed tip. Anterior radical process large, semi-lunar, with a thick and long outgrowth rising from its middle part ("X" in Figs 3-4). Embolus long, semi-circular, with a membraneous inner edge. Abdomen 0.95 long, 0.70 wide, grey.

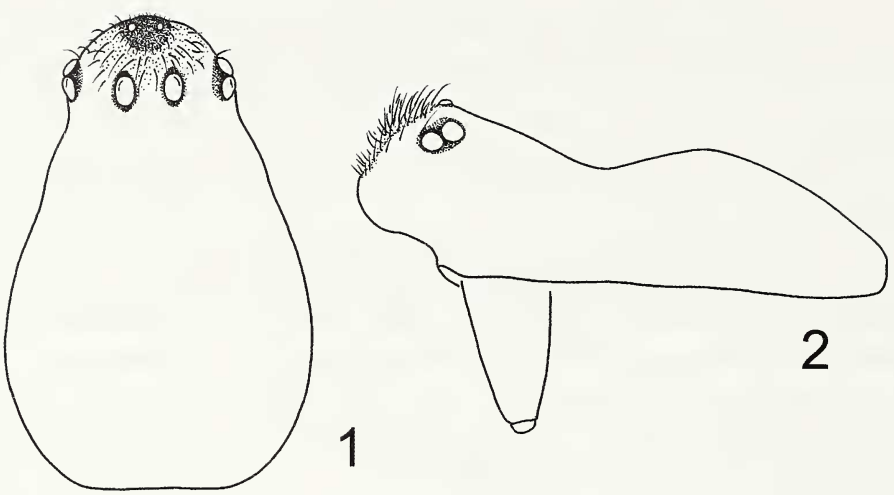
Female. Total length 1.63. Carapace 0.73 long, 0.50 wide. Chelicerae 0.35 long. Leg I 2.01 long (0.55+0.18+0.48+0.45+0.35), IV 2.06 long (0.60+0.18+0.53+0.45-+0.30). Spines on tibiae about 1-1.5 diameter of segment. TmI 0.44. Abdomen 1.03 long, 0.70 wide. Epigyne and vulva as in Figs 5-7: each part of a bisected ventral plate with a cotter-shaped flat elevation in median fissure area, dorsal plate triangular.

TAXONOMIC REMARKS: The new species is very similar to the Eastern Ancient Mediterranean *A. caucasicus* Tanasevitch, 1987, but differs well by the shape of the male carapace which resembles that of *A. altissimus* Simon, 1884a, by the presence of a thick and long outgrowth on the anterior radical process in the male palp, as well as by the presence of a cotter-shaped flat elevation in the median fissure area and of the triangular posterior dorsal plate in the female (Fig. 7 cf. Fig. 8).

DISTRIBUTION: Known from the type locality only.

Brachycerasphora femoralis (O. P.-Cambridge, 1872)

MATERIAL: 1 ♀ + 1 ♂; ISRAEL, ca 10 km SSW of Beit-Shemesh, Adullam Nature Park; 20.V.2007; leg. O. Skutetsky. – 1 ♂, 4 ♀; same; 10.II.2008; leg. O. Skutetsky. – 1 ♂; same; 15.II.2003; leg. U. Columbus & T. Levanony. – 12 ♂, 4 ♀ (MHNG); same; 15.IV.2003; U. Columbus & T. Levanony. – 5 ♂, 1 ♀ (ZMMU) + 1 ♂ + 2 ♂ + 1 ♂ + 9 ♂, 1 ♀ + 4 ♂ + 3 ♂ + 10 ♂, 1 ♀; 8 km SE of Beit-Shemesh, environs of Matta (31º42'47.8"N 35º3'56.0"E), pitfall trap 7A; 13.-18.I.2007; leg. I. Shtirberg. – 1 ♂; 6 km S of Ahusam, Pura (31º29'49"N 34º46'50"E); 24.II.2011; leg. C. Drees & L. Friedman. – 3 ♂; environs of Eshkolot (31º23'41.5"N 34º54'11.9"E), pitfall trap 1B; 3.-8.II.2007; leg. I. Shtirberg. – 1 ♂; environs of Shoham; 25.II.2011; leg. C. Drees & L. Friedman. – 5 ♂; Hatzeva, trap 3; 3.II.2011; leg.



FIGS 1-2
Araeoncus banias sp. n., ♂ holotype. (1) Carapace, dorsal view. (2) Carapace and chelicera, lateral view.

C. Drees & L. Friedman. – 1 ♂; Upper Galilee, environs of En Ya'aqov (33º0'27.5"N 35º14'20.0"E), pitfall traps; 14.-19.I.2007; leg. I. Shtirberg.

PREVIOUS RECORDS: This species was hitherto only known from the female holotype from the "plains of Jordan" (type locality) (O. P.-Cambridge, 1872). The male of this species is still undescribed and will be presented in the near future. This species is here newly recorded for the fauna of Israel.

Canariphantes epigynatus sp. n. Figs 9-16

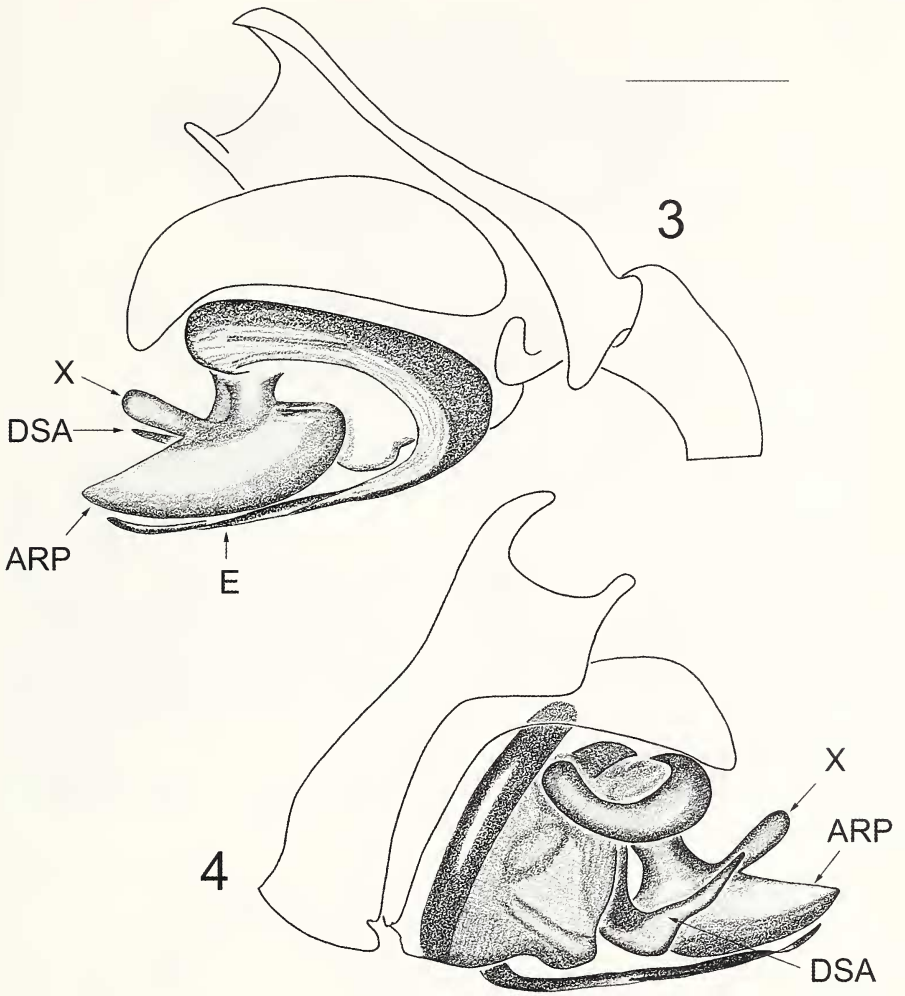
HOLOTYPE: ♂; ISRAEL, ca 10 km SW of Bait She'an, Gilboa, pitfall traps; 23.IV.2010; leg. C. Drees & L. Friedman.

PARATYPES: 4 ♂, 1 ♀; 3 ♂ (MHNG), from same locality, collected together with the holotype.

ETYMOLOGY: The species name, a latinized adjective, refers to the peculiar shape of the epigyne.

DIAGNOSIS: The new species is characterized by the paracymbium carrying a sharp tooth and by the shape of the lamella characteristica in the male, as well as by the peculiar conformation of the epigyne in the female. In there the scapus is strongly modified and consists mainly of the proscapus; the stretcher and the lateral lobes are both reduced, while each bursa copulatrix flanks the apex of the scapus.

DESCRIPTION: Male (holotype). Total length 1.90. Carapace pale brown, unmodified, 0.83 long, 0.56 wide. Chelicerae 0.33 long, unmodified. Legs pale brown. Leg I 3.78 long (1.00+0.25+0.98+0.95+0.60), IV 3.44 long (1.00+0.23+0.93+1.00+0.58). Chaetotaxy: Ti I: 2-1-1-0, II: 2-0-1-0, III-IV: 2-0-0-0; Mt I-III: 1-0-0-0, IV: 0-0-0-0. TmI 0.16. Metatarsus IV without trichobothrium. Palp as in Figs 9-14: cymbium without posterodorsal outgrowth. Paracymbium with a wide and well sclerotized

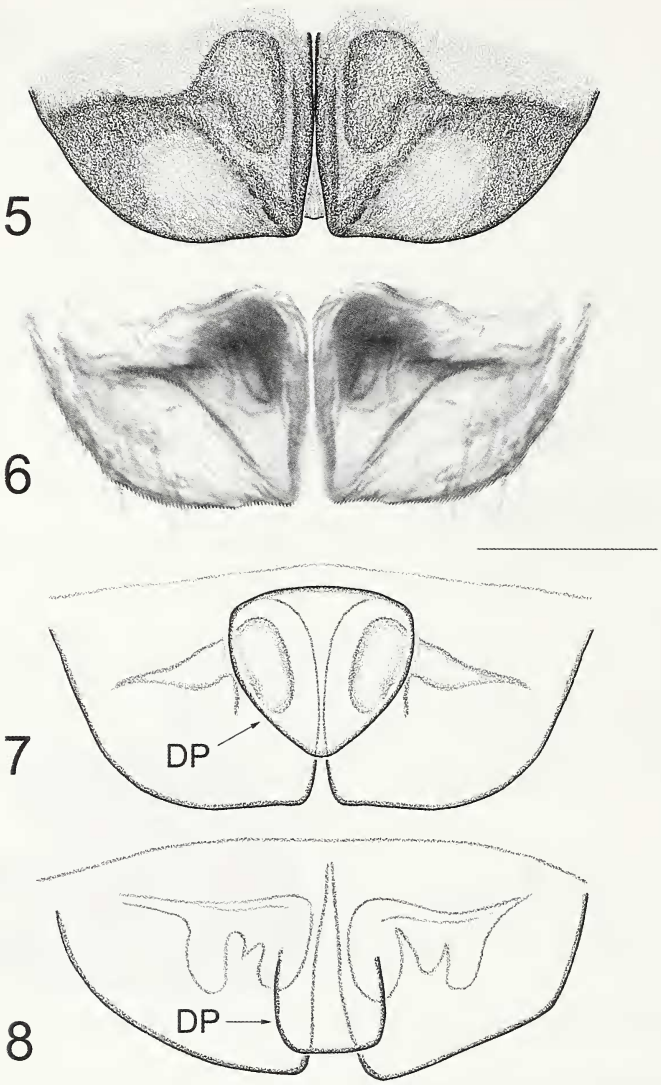


FIGS 3-4

Araeoncus banias sp. n., ♂ holotype. (3-4) Left palp, retrolateral and prolateral view, respectively.

proximal part, distal part small and almost transparent; lower edge of proximal part of paracymbium with a sharp tooth. Lamella characteristica narrow, slightly curved, hook-shaped apically. Embolus relatively large, its thumb well developed. Abdomen 1.13 long, 0.65 wide, grey.

Female. Single female in bad condition: body deformed, legs mostly lost. Epigyne as in Figs 15-16: strongly sclerotized, scapus consisting only of a proscapus, lateral lobes and stretcher reduced. Proscapus straight, parallel-sided; bursae copulatrix situated at apex of proscape.

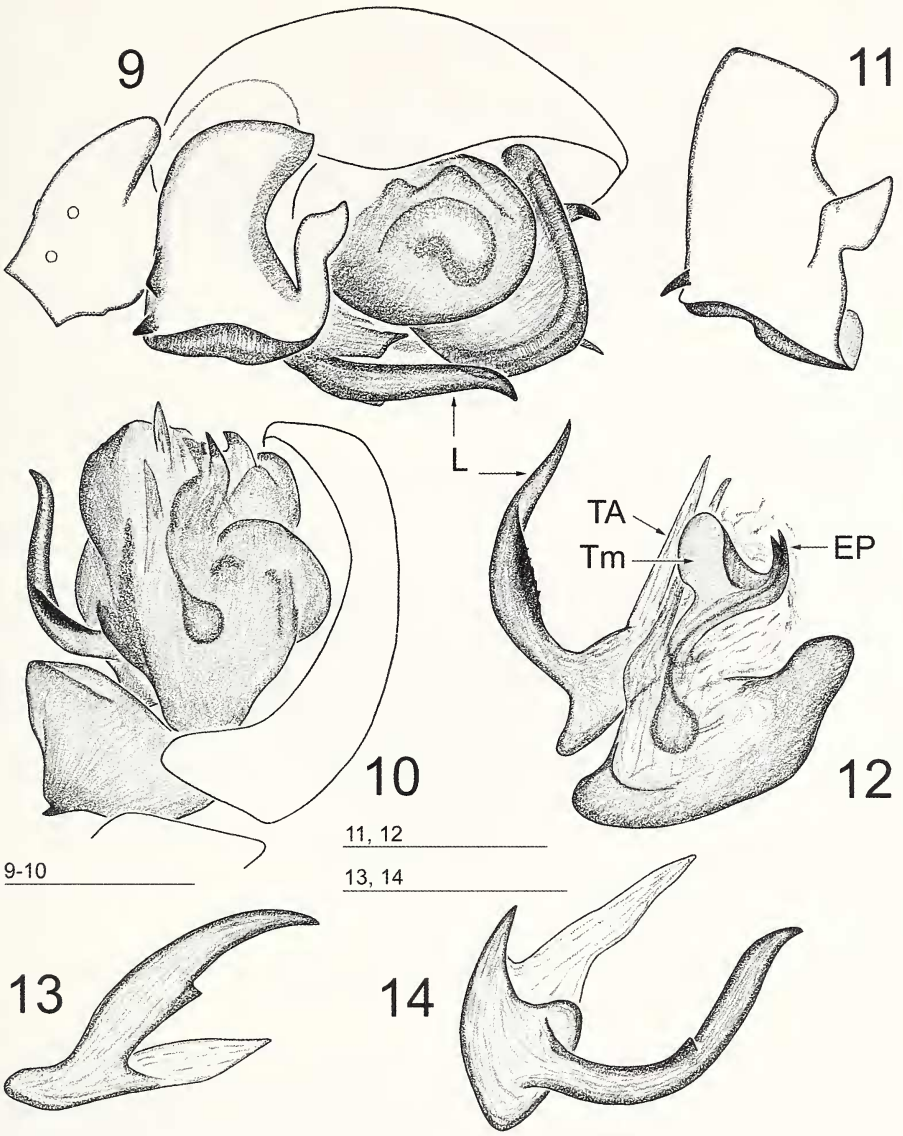


FIGS 5-8

Araeoncus banias sp. n., ♀ paratype (5-7) and *A. caucasicus* Tanasevitch, 1987, specimen from Kazakhstan (8). (5-6) Epigyne, ventral view. (7-8) Vulva, dorsal view.

TAXONOMIC REMARKS: According to the male palp conformation, *C. epigynatus* sp. n. clearly belongs to the Mediterranean *Canariphantes* Wunderlich, 1992, but the structure of the epigyne is unusual and strongly resembles that of *Fistulaphantes canalis* Tanasevitch & Saaristo, 2006, a species known from Nepal.

DISTRIBUTION: Known from the type locality only.

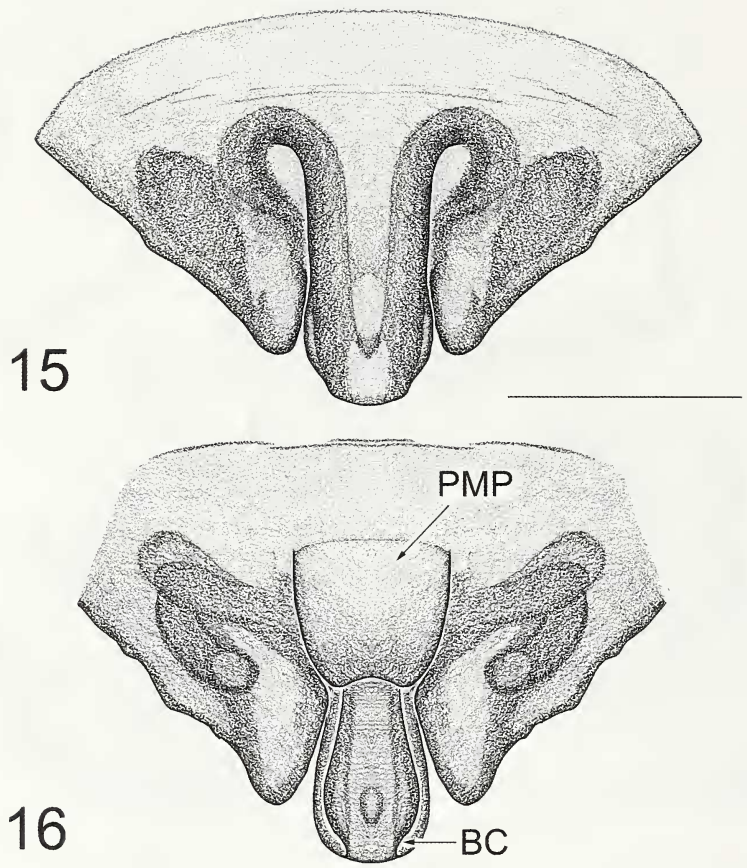


FIGS 9-14

Canariphantes epigynatus sp. n., ♂ paratype. (9-10) Right palp, retrolateral and ventral view, respectively. (11) Cymbium, lateral view. (12) Embolic division, ventral view. (13-14) Lamella characteristica, different aspects.

Canariphantes nanus (Kulczyński, 1898)

MATERIAL: 8 ♂, 3 ♀ (ZMMU); ISRAEL, Upper Galilee, SW macroslope of Mt Hermon (33.29510ºN 35.76143ºE), 1530 m a.s.l., stony slope near top, sparse forest of *Quercus ithaburensis*, herbless, *Crataegus*; 15.IX.2011; leg. A. Tanasevitch, T. Piterkina & S. Zonstein. – 2 ♂, 4 ♀ (MHNG); Upper Galilee, Mt Adir (33.03215ºN 35.36626ºE), 787 m a.s.l., *Quercus ithabu-*



FIGS 15-16
Canariphantes epigynatus sp. n., ♀ paratype. (15-16) Epigyne, ventral and dorsal view, respectively.

rensis and *Q. calliprinos* forest with *Cistus creticus*, herbless, leaf litter; 13.IX.2011; leg. A. Tanasevitch, T. Piterkina & S. Zonstein. –1 ♂; Upper Galilee, N slope of Mt Meron (32.99937ºN 35.39538ºE), 1080 m a.s.l., *Quercus calliprinos* and *Q. bossieri* forest, *Arbutus andrachne*, *Cercis ciliquastrum*, *Acer obtusifolium*, *Pistacia palestinensis*, *Pyrus syriaca*, *Spartium unceum*, *Crataegus aronia*, *Sarsaparilla*, herbless, leaf litter; 13.IX.2011; leg. A. Tanasevitch, T. Piterkina & S. Zonstein. – 1 ♂; Mt Meron (32º59'53.86"N 35º25'37.23"E), forest, pitfall traps 7-(7); 12.-19.XI.2007; leg. T. Levanony. – 1 ♀; Upper Galilee, Banias Nature Reserve, 370 m a.s.l., bank of Guveta stream (33.24839ºN 35.69193ºE), among stones and leaf litter (*Quercus calliprinos* and *Laurus nobilis*); 15.IX.2011; leg. A. Tanasevitch, T. Piterkina & S. Zonstein. – 1 ♂; Upper Galilee, environs of En Ya'aqov (33º0'27.5"N 35º14'20.0"E), pitfall traps; 14.-19.I.2007; leg. I. Shtirberg. – 1 ♂; same, pitfall trap 11; 14.-19.IV.2007; leg. I. Shtirberg. – 1 ♂; same, pitfall trap 4B; 14.-19.IV.2007; leg. I. Shtirberg. – 3 ♂; ca 10 km SSW of Beit-Shemesh, Adullam Nature Park; 15.XI.2003; leg. U. Columbus & T. Levanony. – 4 ♂, 1 ♀ environs of Matta (31º42'47.8"N 35º3'56.0"E); 13-18.IV.2007; leg. I. Shtirberg.

REMARKS: This species is here newly recorded for the fauna of Israel.

Dactylopisthes digiticeps (Simon, 1881)

MATERIAL: 1 ♂; ISRAEL, Hatzeva, pitfall trap 3; 3.II.2011; leg. C. Drees & L. Friedman. – 28 ♂, 5 ♀; 2 km W of Yeruham, bank of Yeruham Lake (30°59.3'N 34°54'E), *Tamarix* spp. and *Arundo donax*, 450 m; 7.III.2011; leg. C. Drees & L. Friedman. – 10 ♂, 3 ♀; same; 3.VIII.2010; leg. C. Drees & L. Friedman. – 8 ♂, 8 ♀; same; 20.VII.2010; leg. C. Drees & L. Friedman. – 4 ♂, 5 ♀; same; 14.III.2011; leg. C. Drees & L. Friedman. – 1 ♂; Central Negev Desert, Sede Boqer (30°52'3.1"N 34°46'17.8"E), pitfall traps; 13.-18.I.2007; leg. I. Shtirberg. – 1 ♂; Qidron; 16.III.2011; leg. C. Drees & L. Friedman. – 20 ♂, 5 ♀; south shore of Lake Kinneret near Deganya; 26.IV.2010; leg. C. Drees & L. Friedman. – 1 ♂; same; 30.I.2011; leg. C. Drees & L. Friedman.

PREVIOUS RECORDS: In Israel this species was hitherto known from Galilee, Ginosar (TANASEVITCH, 2011).

Diplocephalus graecus (O. P.-Cambridge, 1872)

MATERIAL: 3 ♂; ISRAEL, ca 10 km SSW of Beit-Shemesh, Adullam Nature Park; 20.III.2008; leg. O. Skutetsky.

REMARKS: This species is here newly recorded for the fauna of Israel.

Erigone dentipalpis (Wider, 1834)

MATERIAL: 2 ♂, 1 ♀; ISRAEL, Yeruham; 20.VII.2011; leg. C. Drees & L. Friedman. – 5 ♀; south shore of Lake Kinneret near Deganya; 26.IV.2010; leg. C. Drees & L. Friedman. – 1 ♂; Ha Besor; 15.XI.2010; leg. C. Drees & L. Friedman.

PREVIOUS RECORDS: In Isarael this species was hitherto known from Beer Sheva (Pluess *et al.*, 2008) and from Maize, Newe Yaar (TANASEVITCH, 2011).

Frontinellina frutetorum (C. L. Koch, 1834)

MATERIAL: 1 ♀; ISRAEL, Upper Galilee, Nahal Kzif Valley, env. of Hila (33.04104°N 35.23331°E), *Quercus calliprinos* herbless forest with *Laurus nobilis*, 460 m a.s.l.; 16.09.2011; leg. A. Tanasevitch, T. Piterkina & S. Zonstein. – 1 ♂, 1 ♀; Banias National Reserve (33°14.8'N 35°41.8'E); 25.V.2010; leg. S. Zonstein. – 3 ♂, 1 ♀; Tel Aviv, Ramat Aviv; 4.VI.2006; leg. L. Friedman. – 1 ♀; Jerusalem, Hebrew University campus, Giv'at Ram; 10.VII.2011; leg. S. Zonstein.

PREVIOUS RECORDS: In the Near East this species was hitherto known from Hebron and Jericho, the Palestinian territory (O. P.-Cambridge, 1872, as *Linyphia frutetorum*).

Gonatium occidentale Simon, 1918

MATERIAL: 2 ♂; ISRAEL, Upper Galilee, Mt Meron, Ba'al-Shem-Tov forest (32°59'2.41"N 35°28'23.36"E), pitfall traps; 13.-20.XI.2007; leg. T. Levanony.

REMARKS: This species is here newly recorded for the fauna of Israel. It is also known from France, Spain, Algeria and Morocco (Platnick, 2012).

Gnathonarium dentatum (Wider, 1834)

MATERIAL: 5 ♂, 6 ♀; ISRAEL, south shore of Lake Kinneret near Deganya; 26.IV.2010; leg. C. Drees & L. Friedman; – 3 ♂; same; 30.I.2011; leg. C. Drees & L. Friedman. – 2 ♀; same; 12.II.2010; leg. C. Drees & L. Friedman. – 1 ♀; 6 km S of Ahusam, Pura (31°29'49"N 34°46'50"E); 24.II.2011; leg. C. Drees & L. Friedman. – 7 ♂, 6 ♀; 2 km W of Yeruham, bank of Lake Yeruham (30°59.3'N 34°54'E), *Tamarix* spp. and *Arundo donax*, 450 m a.s.l., pitfall

traps; 14.III.2011; leg. C. Drees & L. Friedman. – 3 ♂; same; 3.VIII.2010; leg. C. Drees & L. Friedman. – 12 ♂ & 17 ♀; same; 7.III.2011; leg. C. Drees & L. Friedman. – 2 ♂, 2 ♀; Upper Galilee, env. of Lake Hula; 21.II.2011; leg. C. Drees & L. Friedman. – 10 ♂, 10 ♀; same; 30.I.2011; leg. C. Drees & L. Friedman.

REMARKS: On the basis of a particular abdominal colour pattern alone, O. P.-Cambridge (1872) described a subspecies, *Erigone dentata orientalis* O. P.-Cambridge, 1872, from Elisha's Well, Jericho, the Palestinian territory. Specimens at my disposal show a standard, ordinary body coloration.

Improphantes breviscapus sp. n. Figs 17-23

HOLOTYPE: ♂; ISRAEL, ca 10 km SSW of Beit-Shemesh, Adullam Nature Park, 300-400 m a.s.l., pitfall traps; 10.III.2008; leg. O. Skutetsky.

PARATYPES: 2 ♂, 4 ♀; ca 10 km SSW of Beit-Shemesh, Adullam Nature Park; VI-II.2003; T. Levanony. – 4 ♂, 2 ♀ (MHNG); ca 10 km SW of Bait She'an, Gilboa, pitfall trap 5; 23.IV.2010; leg. C. Drees & L. Friedman. – 1 ♂; ca 8 km SE of Beit-Shemesh, env. of Matta (31°42'47.8"N 35°3'56.0"E), pitfall trap 13C; 13.-18.I.2007; leg. I. Shtirberg. – 1 ♂; env. of En Ya'aqov (33°0'27.5"N 35°14'20.0"E), pitfall traps; 26.XI-1.XII.2006; leg. I. Shtirberg. – 1 ♀ (MHNG); 15 km S Haifa, Nahal Oren Canyon, 7-8.IV.1995, leg. T. Pavliček. – 1 ♂ (ZMMU); Pamat-HaNadiv, 1 km S of Zihron-Ya'aqov (32°33'N 34°57'E), 130 m a.s.l.; 18.XII.2010; leg. S. Zonstein.

ETYMOLOGY: The specific name, a noun in apposition, refers to the shape of the proscape.

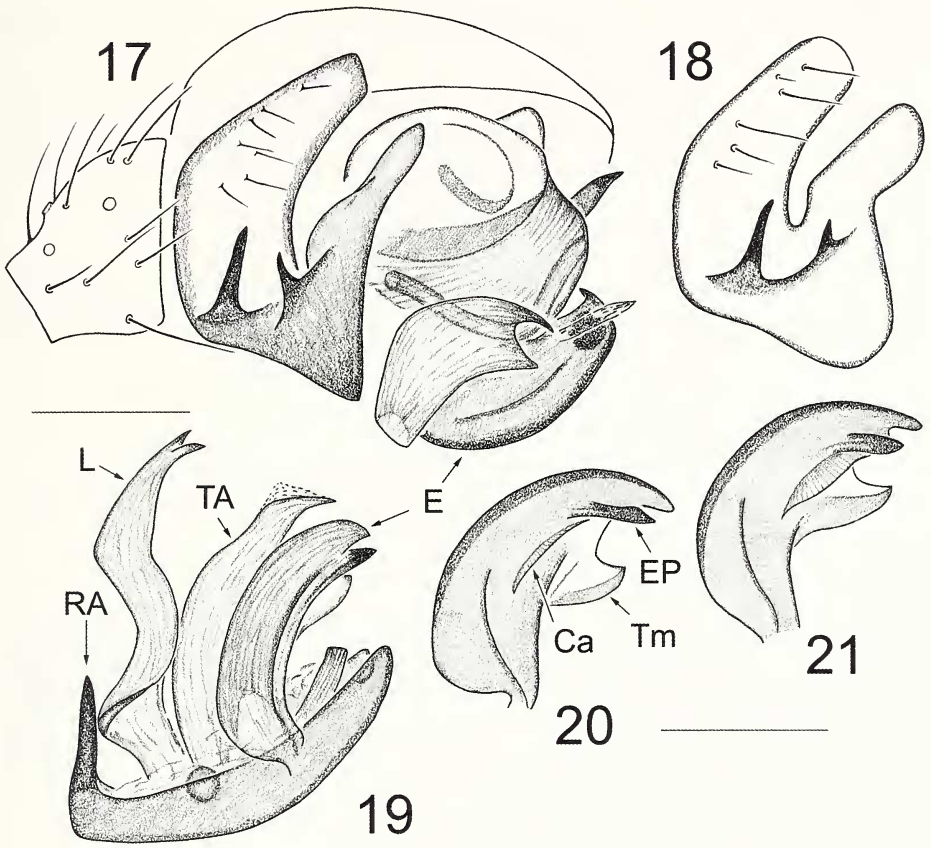
DIAGNOSIS: The species is characterized by the armed paracymbium and the shape of the lamella characteristica in the male, as well as by the circular proscape and the reduced stretcher in the female.

DESCRIPTION: Male (holotype). Total length 2.00. Carapace unmodified, 0.88 long, 0.75 wide, yellow, with a narrow dark margin. Chelicerae 0.40 long. Legs yellow. Leg I 3.93 long (1.00+0.25+1.05+0.95+0.68), leg IV 4.11 long (1.03+0.25+1.03 +1.05+0.75). Chaetotaxy: Ti I: 2-1-1-0, II: 2-0-1-0, III-IV: 2-0-0-0; Mt I-III: 1-0-0-0, IV: 0-0-0-0. TmI 0.17. Palp as in Figs 17-21: cymbium without posterodorsal outgrowth. Paracymbium U-shaped, with two well-sclerotized teeth of different size. Radix with a spear-shaped outgrowth at base of lamella characteristica. Lamella characteristica relatively short and wide, with a hollow apically. Terminal apophysis unipartite, long and narrow. Embolus with a thick embolus proper and a small thumb, carina narrow. Fickert's gland spherical. Abdomen 1.00 long, 0.68 wide, pale grey.

Female (from Adullam). Total length 2.15. Carapace unmodified, 0.83 long, 0.68 wide. Chelicerae 0.33 long. Leg I 3.88 long (1.05+0.30+1.00+0.90+0.63), leg IV 3.78 long (1.05+0.25+0.98+0.90+0.60). TmI 0.18. Epigyne as in Figs 22-23: proscape circle-shaped, distal part of scape very wide, stretcher reduced, a pit situated at the end of distal part of scape.

TAXONOMIC REMARKS: This species is similar to the Anatolian *I. turok* Tanasevitch, 2011 (known from the male only), in particular in the presence of a spear-shaped outgrowth on the radix near the base of the lamella characteristica. The new species differs clearly from *I. turok* by the peculiar shape of the lamella characteristica and the larger proximal teeth on the paracymbium.

DISTRIBUTION: Known from Israel only.



FIGS 17-21

Improphantes breviscapus sp. n., ♂ paratype from Adullam. (17) Right palp, retrolateral view. (18) Cymbium, lateral view. (19) Embolic division, ventral view. (20-21) Embolus, different aspects.

Linyphia mimonti Simon, 1884b

MATERIAL: 1 ♂; ISRAEL, near Haifa, Mt Carmel, Nahal Oren, forest; 3. & 6.III.2003; leg. S. Zonstein.

PREVIOUS RECORDS: This species is here newly recorded for the fauna of Israel. It is also known from Italy, Greece and Lebanon (Platnick, 2012).

Mecopisthes peusi Wunderlich, 1972

MATERIAL: 2 ♂; ISRAEL, 10 km SSW of Beit-Shemesh, Adullam Nature Park, 300-400 m a.s.l., pitfall traps; 10.III.2008; leg. O. Skutetsky. – 20 ♂, 2 ♀; 5 ♂, 2 ♀ (MHNG); Mt Tavor; 21.II.2011; leg. C. Drees & L. Friedman. – 1 ♂ + 1 ♂; ca 8 km SE of Beit-Shemesh, environs of Matta (31°42'47.8"N 35°3'56.0"E), pitfall trap 9D; 3.-8.II.2007; leg. I. Shtirberg.

REMARKS: This species is here newly recorded for the fauna of Israel.

Megalepthyphantes kuhitangensis (Tanasevitch, 1989)

MATERIAL: 1 ♀; ISRAEL, Central Negev, 1 km W of Sede Boqer (30°51'N 34°46'E), 500 m a.s.l.; 3.I.2011; leg. S. Zonstein.

REMARKS: The female fits Central Asian *M. kuhitangensis* by all parameters, except for a hollow on the posterior median plate: the hollow in the Israeli specimen is slightly deeper than in its Asian conspecifics. This species is here newly recorded for the fauna of Israel.

Mermessus fradeorum (Berland, 1932)

MATERIAL: 13 ♂, 1 ♀; ISRAEL, Yeruham, 3.VIII.2010, leg. C. Drees & L. Friedman. 1 ♂ (ZMMU); Ha Besor; 15.XI.2010; leg. C. Drees & L. Friedman. – 1 ♂ (MHNG); En Avedat; 26.VII.2010; leg. C. Drees & L. Friedman.

REMARKS: This species is here newly recorded for the fauna of Israel.

Microctenonyx subitaneus (O. P.-Cambridge, 1875b)

MATERIAL: 6 ♂; ISRAEL, Tel-Aviv; 17.-22.X.2006; leg. M. Vonshak.

PREVIOUS RECORDS: In Israel this species was hitherto known from Galilee, Ohalo (Tanasevitch, 2011).

Pelecopsis elongata (Wider, 1834)

MATERIAL: 1 ♂; ISRAEL, 8 km SE of Beit-Shemesh, env. of Matta (31°42'47.8"N 35°3'56.0"E), pitfall trap 7A; 13.-18.I.2007; leg. I. Shtirberg. – 5 ♂, 1 ♀; same, pitfall trap 1B; 25.-30.X.2006; leg. I. Shtirberg. – 1 ♂; same, pitfall trap 15B; 4.-9.XI.2006; leg. I. Shtirberg. – 1 ♂, 3 ♀; Adullam; 15.XI.2003; U. Columbus & T. Levanony. – 3 ♂, 1 ♀; ca 10 km SW of Bait She'an, Gilboa, pitfall trap 7; 30.I.2011; leg. C. Drees & L. Friedman. – 1 ♂; Upper Galilee, Nahal Ksif; 22.II.2011; leg. C. Drees & L. Friedman. – 1 ♂, 2 ♀; Adullam; 15.XI.2003; U. Columbus & T. Levanony.

REMARKS: This species is here newly recorded for the fauna of Israel.

Pelecopsis inedita (O. P.-Cambridge, 1875a)

MATERIAL: 1 ♂; 1 ♂, 1 ♀ (MHNG); ISRAEL, Adullam; 15.XI.2003; U. Columbus & T. Levanony.

PREVIOUS RECORDS: In Israel this species was hitherto known from Beer Sheva (Pluess *et al.*, 2008).

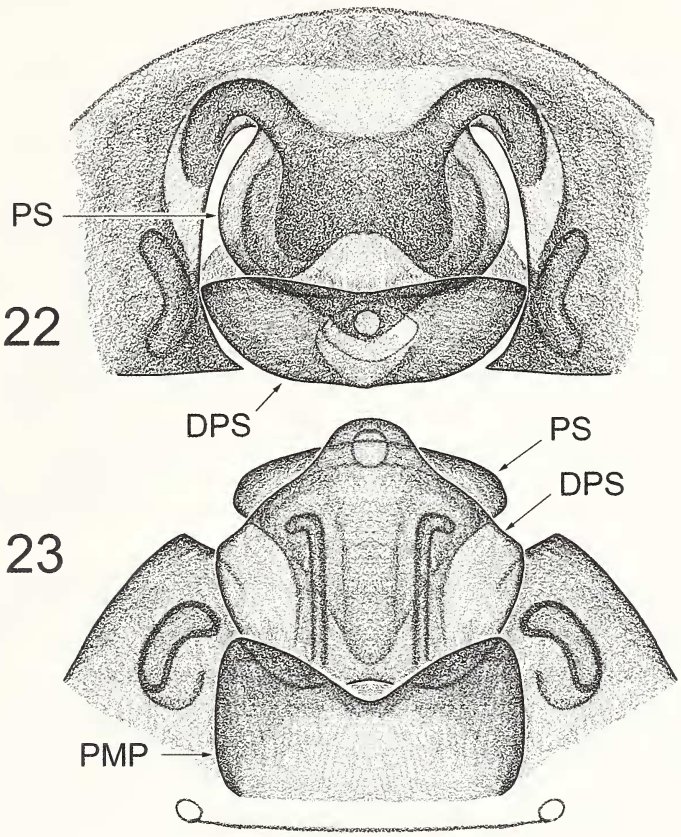
Prinerigone vagans (Audouin, 1826)

MATERIAL: 5 ♂; ISRAEL, Yeruham; 20.VII.2011; leg. C. Drees & L. Friedman. – 2 ♂; south shore of Lake Kinneret near Deganya; 26.IV.2010; leg. C. Drees & L. Friedman.

PREVIOUS RECORDS: In Israel this species was hitherto known from Jezreel-Nazareth Rd. (O. P.-Cambridge, 1872, as *Erigone spinosa* O. P.-Cambridge, 1872).

Styloctetor romanus (O. P.-Cambridge, 1872)

MATERIAL: 1 ♂; ISRAEL, Upper Galilee, Mt Meron, Ba'al-Shem-Tov forest (32°58' 56.89"N 35°28'6.99"E), pitfall trap 22; 19.-26.II.2007; leg. T. Levanony. – 1 ♂ (MHNG); Mt Hermon, 1700 m a.s.l.; 12.V.2010; C. Dress & L. Friedman. – 2 ♂ (MHNG); env. of En Ya'aqov (33°0'27.5"N 35°14'20.0"E), pitfall trap 18; 4.-9.II.2007; leg. I. Shtirberg. – 1 ♂; 8 km SE of Beit-Shemesh, env. of Matta (31°42'47.8"N 35°3'56.0"E), pitfall trap 9D; 3.-8.II.2007; leg. I. Shtirberg. – 10 ♂ (ZMMU); same; 13.-18.I.2007; leg. I. Shtirberg.



FIGS 22-23

Improphantes breviscapus sp. n., ♀ paratype from Adullam. (22-23) Epigyne, ventral and dorsal view, respectively.

PREVIOUS RECORDS: In Israel this species was hitherto known from Jerusalem (O. P.-Cambridge, 1872, as *Erigone incauta* O. P.-Cambridge, 1872).

Tenuiphantes tenuis (Blackwall, 1852)

MATERIAL: 5 ♂, 6 ♀; ISRAEL, Upper Galilee, Banias, 370 m a.s.l., bank of Guveta stream (33.24839ºN 35.69193ºE), among stones and leaf litter (*Quercus calliprinos* and *Laurus nobilis*); 15.IX.2011; leg. A. Tanasevitch, T. Piterkina & S. Zonstein. – 1 ♀; Mt Meron, above Field Station (33º0'41.54"N 35º22'47.44"E), pitfall trap 29-(7); 16.-23.II.2007; leg. T. Levanony. – 1 ♂; Upper Galilee, Nahal Kzif Valley, env. of Hila (33.04104ºN 35.23331ºE), 460 m a.s.l., *Quercus calliprinos* herbless forest with *Laurus nobilis*; 16.09.2011; leg. A. Tanasevitch, T. Piterkina & S. Zonstein.

REMARKS: This species is here newly recorded for the fauna of Israel.

Trichoncoides piscator (Simon, 1884a)

MATERIAL: 4 ♂, 1 ♀; ISRAEL, 10 km SSW of Beit-Shemesh, Adullam Nature Park, 300-400 m a.s.l., pitfall traps; 10.III.2008; leg. O. Skutetsky.

PREVIOUS RECORDS: In Israel this species was hitherto known from Be'er Sheva (Pluess *et al.*, 2008)

Trichoncus rostralis sp. n. Figs 24-33

HOLOTYPE: ♂; ISRAEL, Upper Galilee, Mt Meron, Meron Field Station junction (33°1'10.62"N 35°23'12.17"E), pitfall traps; 17.-24.II.2007; leg. T. Levanony.

PARATYPES: 4 ♂, 1 ♀; 1 ♂ (MHNG); from same locality, collected together with the holotype. – 1 ♀ (MHNG); from same locality, pitfall traps 24-(8); 10-17.V.2007; leg. T. Levanony. – 1 ♀ (MHNG); Mt Meron; 2.IV.2011; leg. T. Levanony. – 1 ♀ (ZMMU); Mt Meron, above Field Station (35°22'42.92"N 33°0'41.64"E); 10-17.V.2007; leg. T. Levanony. – 1 ♂ (MHNG); Ziv'on (33°01'N 35°25'E), 712 m a.s.l., old-growth woodland; 3.VI.2005; leg. A. Timm & T. Assmann.

ETYMOLOGY: The specific name, an adjective, is derived from the Latin "*rostrum*", meaning "bird beak", referring to the shape of the epigynal process.

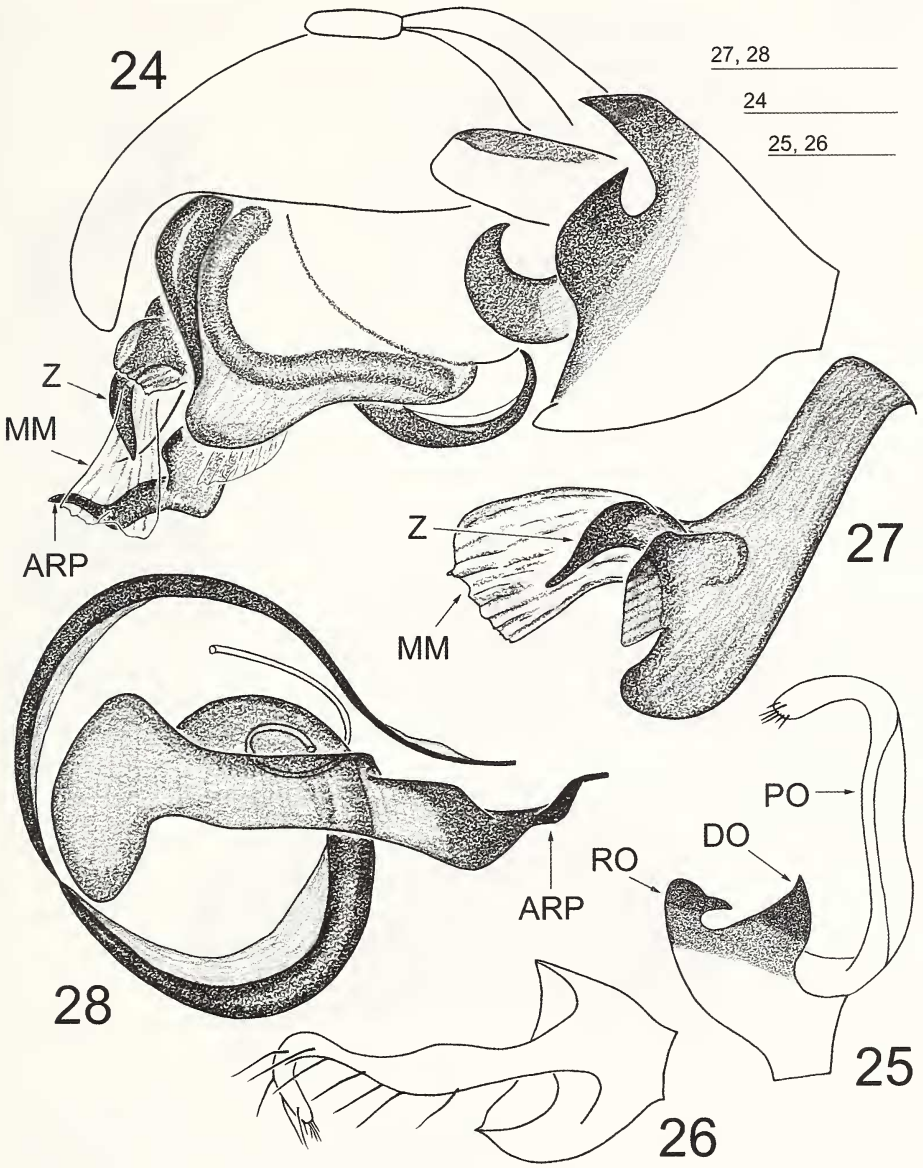
DIAGNOSIS: The new species is characterized by the peculiar shape of the palpal tibia and by the presence of a hook-like outgrowth on the distal suprategular apophysis in the male, as well as by the beak-like downward-turned epigynal process in the female.

DESCRIPTION: Male (holotype). Total length 2.70. Carapace unmodified, dark brown, 1.20 long, 0.93 wide. Chelicerae 0.55 long, unmodified. Legs brown. Leg I 3.29 long (0.95+0.28+0.85+0.68+0.53), IV 3.41 long (1.00+0.28+0.90+0.75+0.48). Chaetotaxy: 1.1.1.1, length of spines about 1.5 diameter of segment. TmI 0.36. Metatarsus IV without trichobothrium. Palp as in Figs 24-28: palpal tibia strongly modified: retrolateral outgrowth claw-shaped; dorsal one conical, sharpened; prolateral outgrowth narrow, very long, arched distally. Paracymbium small, simple. Distal suprategular apophysis straight, rounded apically, with a hook-like outgrowth distally ("Z" in Figs 24, 27) and a small flat lobe near its base. Median membrane long and covering tips of radical anterior apophysis and of embolus. Radical part of embolic division small, rounded; anterior apophysis strongly protruded, twisted; embolus long, with a membranous edge, forming a wide circle. Abdomen 1.63 long, 0.93 wide; dark grey, with sparse strong hairs dorsally.

Female (from Mt Meron). Total length 2.75. Habitus as in Fig. 29. Carapace dark brown, unmodified, 1.05 long, 0.88 wide. Chelicerae unmodified, 0.43 long. Leg I 3.29 long (0.95+0.33+0.80+0.68+0.53), IV 3.41 long (1.03+0.30+0.85+0.73+0.50). Chaetotaxy: 1.1.1.1, length of spines about 2 diameter of segment, or a bit longer. TmI 0.38. Abdomen 2.05 long, 1.30 wide, dark grey, with sparse strong hairs dorsally. Epigyne as in Figs 30-33: ventral plate well protruding, turned down, beak-like. Dorsal plate rectangular with rounded angles.

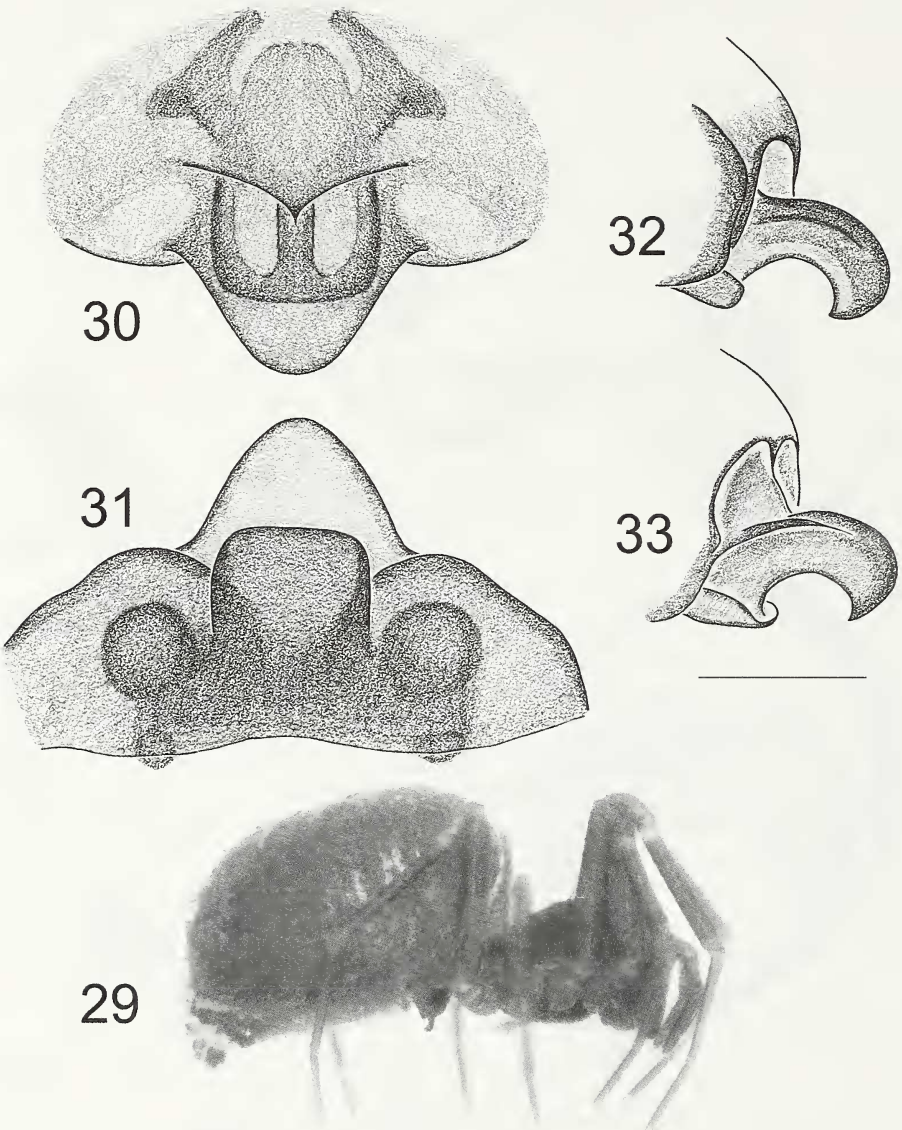
TAXONOMIC REMARKS: This species is similar to the South European *T. auritus* (L. Koch, 1869) and the West Mediterranean *T. trifidus* Denis, 1965, but differs clearly by the shape of the palpal tibia, the presence of a hook-like outgrowth on the distal suprategular apophysis, as well as by the beak-like epigynal process which is strongly turned downwards.

DISTRIBUTION: The species is known only from the Upper Galilee, Israel.



FIGS 24-28

Trichoncus rostralis sp. n., ♂ paratype from Mt Meron. (24) Left palp, retrolateral view. (25-26) Palpal tibia, prolateral and dorsal view, respectively. (27) Distal suprategular apophysis. (28) Embolic division.



FIGS 29-33

Trichoncus rostralis sp. n, ♀ paratype from Mt Meron. (29) Habitus, lateral view (not to scale). (30-31) Epigyne, ventral and dorsal view, respectively. (32-33) Epigyne, lateral view, different aspects.

Troxochrus triangularis sp. n. Figs 34-35, 40-48

HOLOTYPE: ♂; ISRAEL, Upper Galilee, env. of En Ya'aqov (33°0'27.5"N 35°14'20.0"E), pitfall traps; 19.-24.I.2007; leg. I. Shtirberg.

PARATYPES: 1 ♂, 3 ♀; from same locality, collected together with the holotype. – 2 ♀ (ZMMU); same, pitfall traps; 14.-19.I.2007; leg. I. Shtirberg. – 8 ♂; 3 ♂, 2 ♀ (MHNG); 3 ♂ (ZMMU); Mt Meron, Meron Field Station (32°59'53.86"N 35°25'37.23"E); 18.-25.II.2007; leg.

T. Levanony. – 1 ♀ (MHNG); same; 2.IV.2011; leg. T. Levanony. – 1 ♂; ca 8 km SE of Beit-Shemesh, env. of Matta (31°42'47.8"N 35°3'56.0"E), pitfall trap 14D; 13.-18.I.2007; leg. I. Shtirberg.

ETYMOLOGY: The species name, a Latin adjective, refers to the triangle shape of the epigynal aperture.

DIAGNOSIS: The new species is characterized by the peculiar shape of the palpal tibia, as well as by the large and flat embolic division, with a short and narrow embolus proper in the male.

DESCRIPTION: Male (paratype from En Ya'aqov). Total length 1.50. Carapace pale reddish brown, modified as in Figs 34-35, 0.78 long, 0.55 wide, sulci present. Chelicerae 0.28 long, unmodified. Legs yellow. Leg I 1.64 long (0.53+0.18+0.40 +0.28+0.25), IV 1.65 long (0.50+0.15+0.43+0.33+0.24). Chaetotaxy: 1.1.1.1, spines weak, their length about diameter of segment. TmI 0.45. Metatarsus IV without trichobothrium. Palp as in Figs 40-46: palpal tibia elongated, ending in a claw-shaped hook, a small tooth present on pro- as well as on retrolateral side of palpal tibia. Paracymbium small, U-shaped. Distal suprategular apophysis very short, with a sharp tooth. Median membrane long and narrow. Embolic division large and flat, embolus proper short and narrow. Abdomen 0.78 long, 0.50 wide, pale grey.

Female (from En Ya'aqov). Total length 1.45. Carapace 0.75 long, 0.53 wide. Chelicerae 0.30 long. Leg I 1.66 long (0.50+0.18+0.43+0.30+0.25), IV 1.64 long (0.48+0.18+0.43+0.30+0.25). TmI 0.46. Abdomen 0.78 long, 0.50 wide. Epigyne as in Figs 47-48: aperture large, deep, triangular, with rounded vertexes. Dorsal plate wide, with a slightly emarginate posterior edge with rounded corners. Body and leg coloration, as well as chaetotaxy, as in male.

TAXONOMIC REMARKS: The new species is similar to the Anatolian *T. apertus* Tanasevitch, 2011, but clearly distinguished by the peculiar shape of the palpal tibia and the small embolus proper in the male, as well as by the triangle shape of the epigynal aperture in the female.

DISTRIBUTION: Known from Israel only.

Typhochrestus meron sp. n. Figs 36-39, 49-57

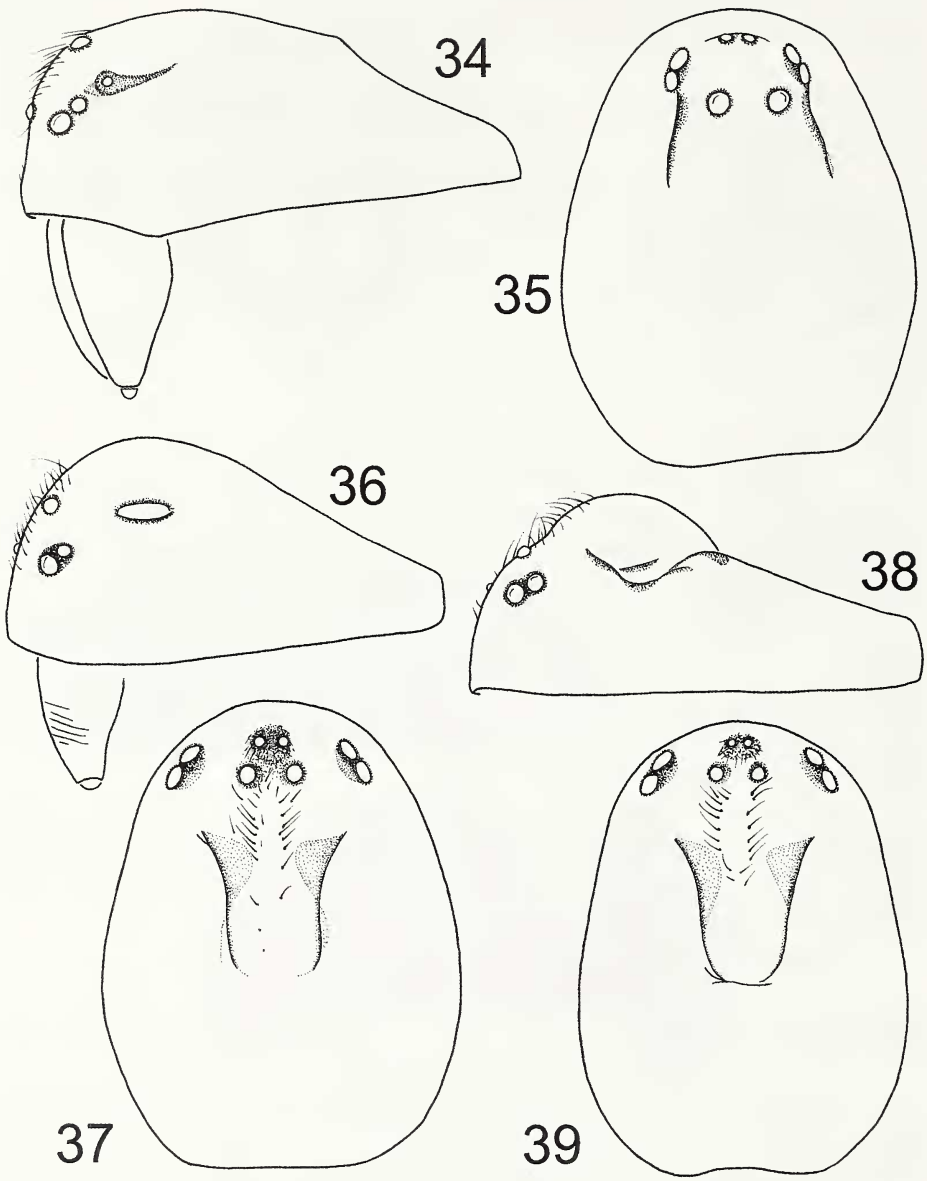
HOLOTYPE: ♂; ISRAEL, Upper Galilee, Mt Meron; 2.IV.2011; T. Levanony.

PARATYPES: 4 ♀; 3 ♀ (MHNG); 2 ♀ (ZMMU); from same locality, collected together with the holotype. – 2 ♂; 2 ♂ (MHNG); Mt Meron, Meron Field Station (32°59'53.86"N 35°25'37.23"E); 18.-25.II.2007; leg. T. Levanony. – 1 ♂, env. of En Ya'aqov (33°0'27.5"N 35°14'20.0"E); 14.-19.I.2007; leg. I. Shtirberg. – 5 ♀; same; 18.-23.III.2006; leg. I. Shtirberg.

ETYMOLOGY: The specific name, a noun in apposition, refers to the type locality.

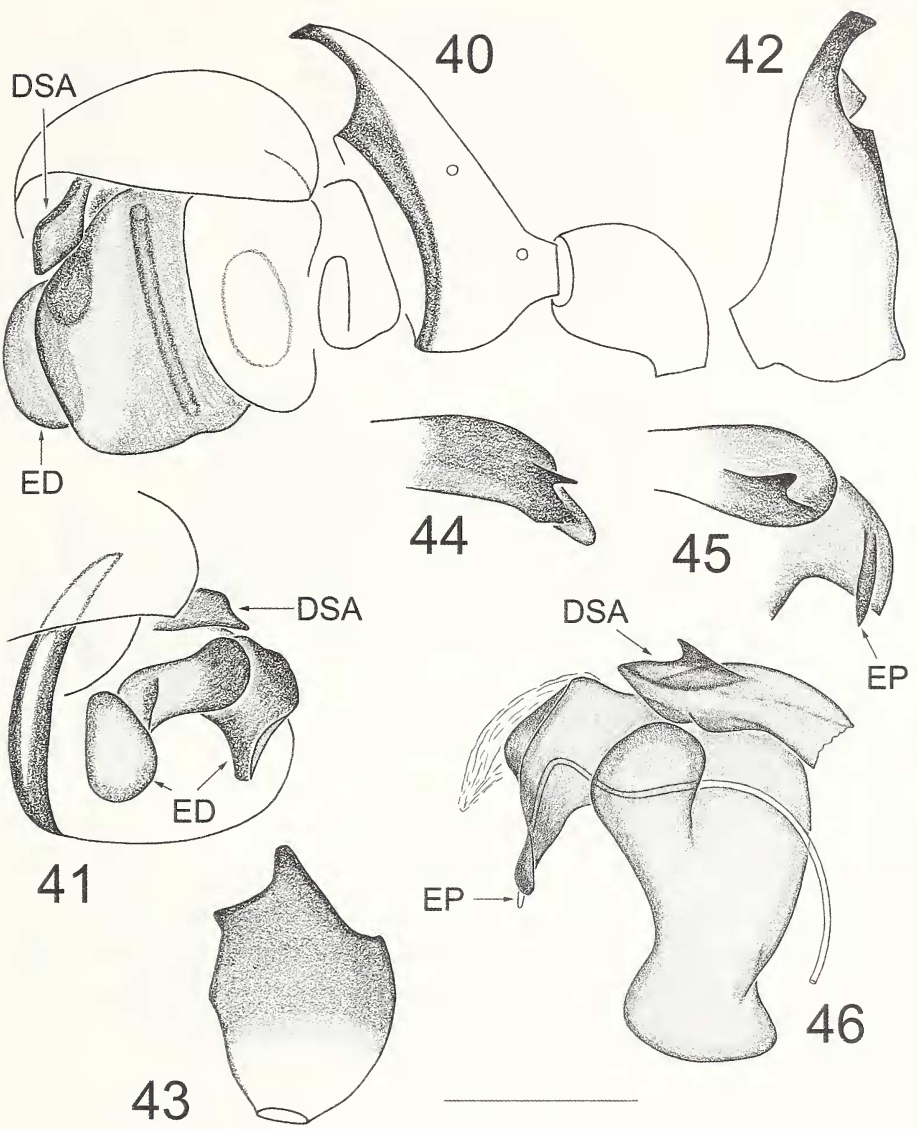
DIAGNOSIS: The new species is characterized by the peculiar shape of the palpal tibia, notably, by the presence of two outgrowths, one of which (the retrolateral one) covers a sharp tooth in dorsal view.

DESCRIPTION: Male (holotype). Total length 1.33. Carapace pale brown, modified as in Figs 36-37, 0.65 long, 0.45 wide, narrow, elongated, sulci slit-like. Chelicerae



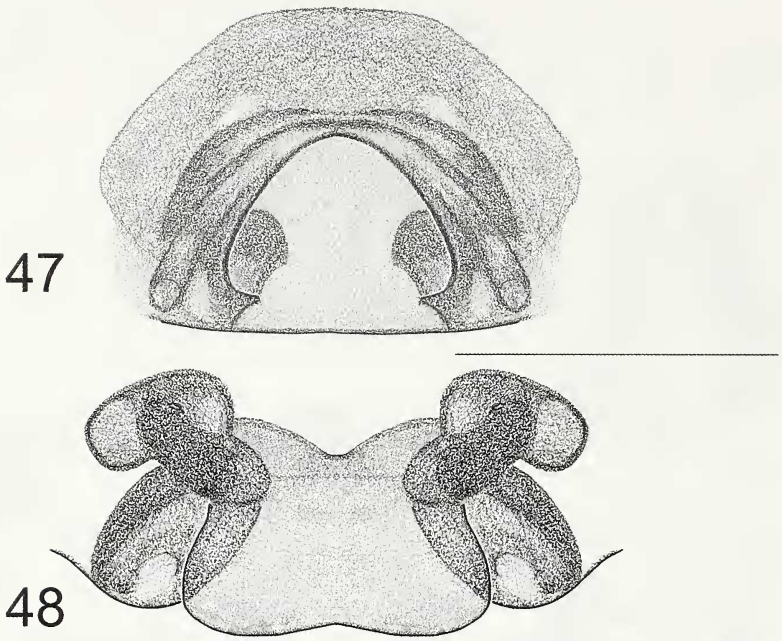
FIGS 34-39

Troxochrus triangularis sp. n., male paratype from En Ya'aqov (34-35) and *Typhochrestus meron* sp. n., male holotype (36-37) and malformed male paratype (38-39). (34, 36, 38) Carapace (with or without chelicera), lateral view. (35, 37, 39) Carapace, dorsal view. Not to scale.



FIGS 40-46

Troxochrus triangularis sp. n., ♂ paratype from En Ya'aqov. (40-41) Left palp, retrolateral and prolateral view, respectively. (42-43) Palpal tibia, prolateral and dorsal view, respectively. (44) Distal suprategular apophysis. (45) Distal suprategular apophysis and distal part of embolic division. (46) Distal suprategular apophysis and embolic division.



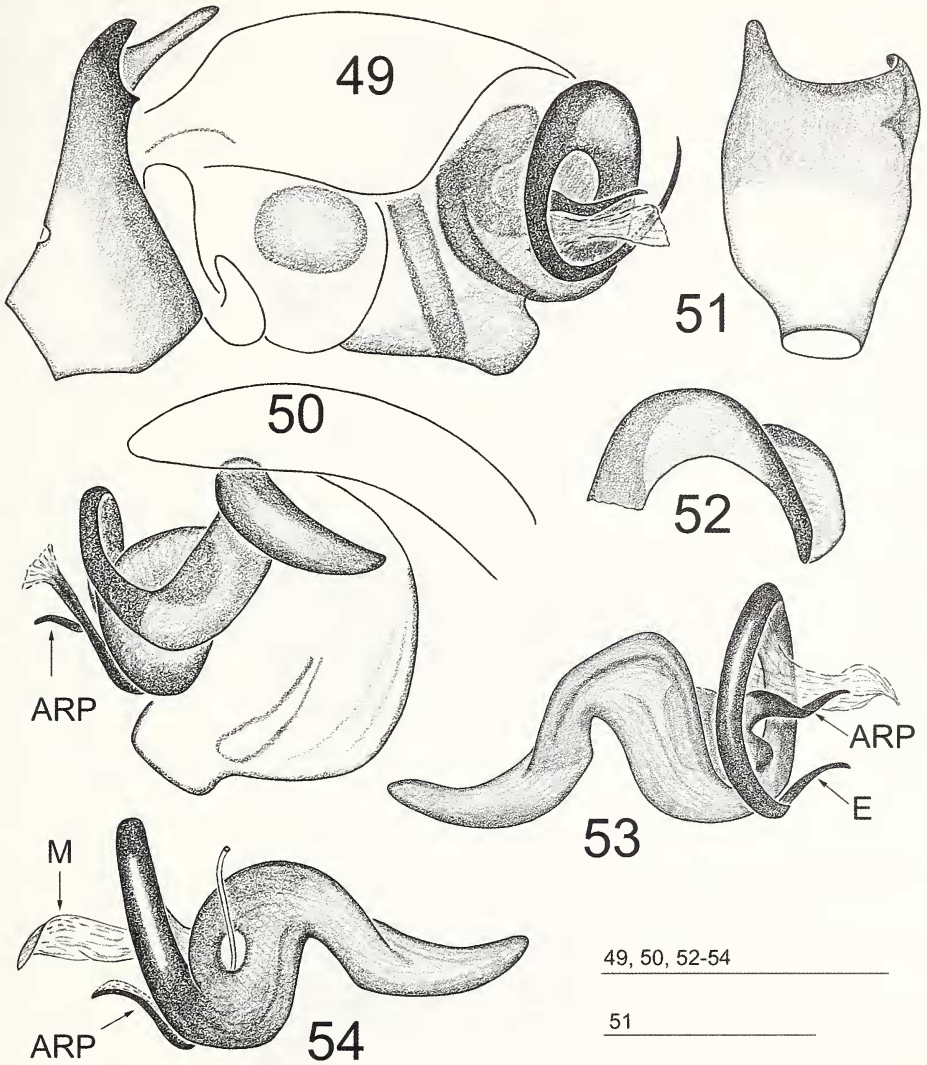
FIGS 47-48
Troxochrus triangularis sp. n., ♀ paratype from En Ya'aqov. (47, 48) Epigyne, ventral and dorsal view, respectively.

0.20 long, unmodified. Legs yellow. Leg I 1.53 long (0.45+0.15+0.40+0.28+0.25), IV 1.61 long (0.48+0.15+0.43+0.30+0.25). Chaetotaxy: unclear, spines strongly reduced virtually indiscernible. TmI 0.40. Metatarsus IV without trichobothrium. Palp as in Figs 49-54: palpal tibia with two outgrowths and a small sharp tooth at base of retrolateral outgrowth. Paracymbium small, simple, hook-shaped. Distal suprategular apophysis tongue-shaped. Radical part of embolic division relatively long, curved; embolus forming a loop, anterior radical process wide at base, tapering regularly towards pointed tip. Abdomen 0.68 long, 0.43 wide, pale grey.

Female (from Mt Meron). Total length 1.45. Carapace 0.60 long, 0.45 wide. Chelicerae 0.25 long, unmodified. Leg I 1.51 long (0.45+0.18+0.35+0.28+0.25), IV 1.68 long (0.50+0.18+0.45+0.30+0.25). Chaetotaxy: 2.2.2.1, spines weak, their length about 1-1.5 diameter of segment. TmI 0.38. Abdomen 0.88 long, 0.55 wide. Epigyne as in Figs 55-56, vulva as in Fig. 57. Body and leg coloration, as well as chaetotaxy, as in male.

TAXONOMIC REMARKS: The new species clearly differs from the other known congeners by the peculiar shape of the palpal tibia (see Diagnosis). The epigyne resembles of that of *T. digitatus* (O. P.-Cambridge, 1872), but clearly differs by the subparallel copulatory ducts.

DISTRIBUTION: The species is only known from Upper Galilee, Israel.



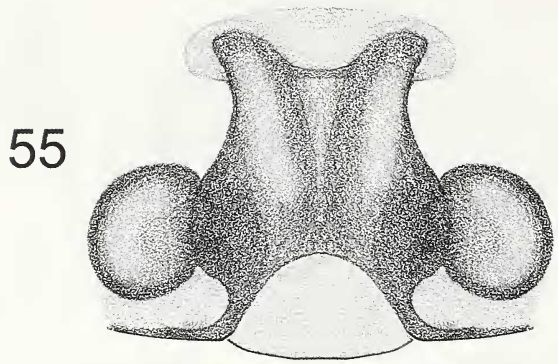
FIGS 49-54

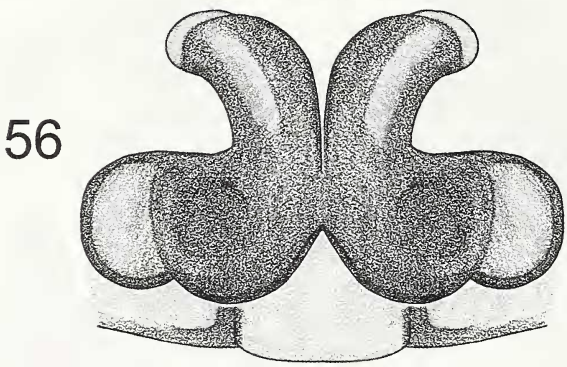
Typhochrestus meron sp. n., ♂ paratype from Mt Meron. (49-50) Right palp, retrolateral and prolateral view, respectively. (51) Palpal tibia, dorsal view. (52) Distal suprategular apophysis. (53-54) Embolic division.

Walckenaeria stylifrons (O. P.-Cambridge, 1875a)

MATERIAL: 1 ♂, 2 ♀ + 1 ♂; ISRAEL, Upper Galilee, Mt Meron, Meron Field Station (32°59'53.86"N 35°25'37.23"E); 7-25.II.2007; leg. T. Levanony.

REMARKS: This species is here newly recorded for the fauna of Israel.





FIGS 55-57

Typhochrestus meron sp. n., ♀ paratype from Mt Meron. (55, 56) Epigyne, ventral and dorsal view, respectively. (57) Vulva, dorsal view.

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REFERENCES

AUDOUIN, V. 1826. Explication sommaire des planches d'arachnides de l'Égypte et de la Syrie publiées par Jules-César Savigny offrant un exposé des caractères naturels des genres, avec la distinction des espèces. *In*: Description de l'Egypte, ou Recueil des observations et des recherches qui ont été faites en Égypte pendant l'expédition de l'Armée française. *Histoire Naturelle* 1 (4): 1-339.

BERLAND, L. 1932. Voyage de MM. L. Chopard et A. Méquignon aux Açores (août-septembre 1930). II; Araignées. *Annales de la Société entomologique de France* 101: 69-84.

BLACKWALL, J. 1852. Descriptions of some newly discovered species of Araneida. *Annals and Magazine of Natural History* (2) 10: 93-100.

CAMBRIDGE, O. P. 1872. General list of the spiders of Palestine and Syria, with descriptions of numerous new species, and characters of two new genera. *Proceedings of the Zoological Society of London* 1871: 212-354.

CAMBRIDGE, O. P. 1875a. On some new species of *Erigone*. *Proceedings of the Zoological Society of London* 1875: 190-224, 323-335.

CAMBRIDGE, O. P. 1875b. Notes and descriptions of some new and rare British spiders. *Annals and Magazine of Natural History* (4) 16: 237-260.

DENIS, J. 1965. Notes sur les érigonides. XXVIII Le genre *Trichoncus* (Araneae). *Annales de la Société entomologique de France* (N.S.) 1: 425-477.

HORMIGA, G. 2000. Higher level phylogenetics of erigonine spiders (Araneae, Linyphiidae, Erigoninae). *Smithsonian Contributions to Zoology* 609: 1-160.

KOCH, C. L. 1834. Arachniden. *In*: HERRICH-SCHÄFFER, G. A. W. (ed.). Deutschlands Insecten, Band 34, Hefte 122-127. *F. Pustet, Regensburg*.

KOCH, C. L. 1836. Die Arachniden, 3. *C. H. Zeh'schen Buchhandlung, Nürnberg*, 104 pp.

KOCH, L. 1869. Beitrag zur Kenntniss der Arachnidenfauna Tirols. *Zeitschrift des Ferdinandeums für Tirol und Vorarlberg* (series 3) 14: 149-206.

KULCZYŃSKI, W. 1898. Symbola ad faunam Aranearum Austriae inferioris cognoscendam. *Rózprawy i sprawozdania z posiedzeń wydzialu matematyczno przyrodniczego Akademji umiejetnosci (Krakow)* 36: 1-114.

PLATNICK, N. I. 2012. The world spider catalog, version 13.0. *American Museum of Natural History*. Online at http://research.amnh.org/iz/spiders/catalog. DOI: 10.5531/db.iz.0001.

PLUESS, T., OPATOVSKY, I., GAVISH-REGEV, E., LUBIN, Y. & SCHMIDT, M. H. 2008. Spiders in wheat fields and semi-desert in the Negev (Israel). *The Journal of Arachnology* 38: 368-373.

SAARISTO, M. I. & TANASEVITCH, A. V. 1996. Redelimitation of the subfamily Micronetinae Hull, 1920 and the genus *Lepthyphantes* Menge, 1866 with descriptions of some new genera. *Berichte des Naturwissenschaftlich-Medizinischen Vereins in Innsbruck* 83: 163-186.

SIMON, E. 1881. Description d'espèces nouvelles du genre *Erigone*. *Bulletin de la Société zoologique de France* 6: 233-257.

SIMON, E. 1884a. Les arachnides de France, volume 5, parts 2-3. *Librarie Encyclopédique de Roret, Paris*, pp. 180-885, pl. 26-27.

SIMON, E. 1884b. Études arachnologiques. 16e Mémoire. XXIII. Matériaux pour servir à la faune des arachnides de la Grèce. *Annales de la Société entomologique de France* (6) 4: 305-356.

SIMON, E. 1918. Descriptions de plusieurs espèces d'arachnides récemment découvertes en France. (Quatrième note). *Bulletin de la Société entomologique de France* 1918: 152-155.

TANASEVITCH, A. V. 1987. The linyphiid spiders of the Caucasus, USSR (Arachnida: Araneae: Linyphiidae). *Senckenbergiana biologica* 67 (4/6): 297-383.

TANASEVITCH, A. V. 1989. The linyphiid spiders of Middle Asia (Arachnida: Araneae: Linyphiidae). *Senckenbergiana biologica* 69 (1/3): 83-176.

TANASEVITCH, A. V. 2011. On linyphiid spiders (Araneae) from the Eastern and Central Mediterranean kept at the Museum d'histoire naturelle, Geneva. *Revue suisse de Zoologie* 118 (1): 49-91.

TANASEVITCH, A. V. & SAARISTO, M. I. 2006. Reassessment of the Nepalese species of the genus *Lepthyphantes* Menge s.l. with description of new genera and species (Araneae, Linyphiidae, Micronetinae). *Senckenbergiana biologica* 86 (1): 11-38.

WIDER, F. 1834. Arachniden. *In*: REUSS, A. (ed.). Zoologische Miscellen. *Museum Senckenbergianum: Abhandlungen aus dem Gebiete der beschreibenden Naturgeschichte* 1: 195-276.

WUNDERLICH, J. 1972. Zur Spinnenfauna Deutschlands, XII. Neue und seltene Arten der Linyphiidae und einige Bemerkungen zur Synonymie (Arachnida: Araneae). *Senckenbergiana biologica* 53: 291-306.

WUNDERLICH, J. 1980. Linyphiidae aus Süd-Europa und Nord-Afrika (Arachn.: Araneae). *Abhandlungen und Verhandlungen des Naturwissenschaftlichen Vereins zu Hamburg (N.F.)* 23: 319-337.

WUNDERLICH, J. 1992. Die Spinnen-Fauna der Makaronesischen Inseln: Taxonomie, Ökologie, Biogeographie und Evolution. *Beiträge zur Araneologie* 1: 1-619.